

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

1st Named Inventor: David T. Jennings III	Group Art Unit:
Serial No.: 10/619,687	3643
Filed: 07/15/2003	Examiner:
Title: Current Modulation-Based Communication from Slave Device	Timothy D. Collins

DECLARATION UNDER 37 C.F.R. § 1.132

I, Gimtong Teowee, do declare and state as follows:

1. All statements herein are made based on my own personal knowledge except where it is indicated that a statement is based on information and belief. All statements made of my own knowledge are true, and all statements made on information and belief are believed to be true.
2. I hold a B.S. in electrical engineering from the University of Rochester (1985), and a Ph.D. in materials science and engineering from the University of Arizona (1992). I worked in the automotive electronics industry for eight years and have been working in the detonator field for about three years.
3. I have closely reviewed and am familiar with the above-noted patent application ("this application"), including the claims as amended by the amendment filed herewith. I have also reviewed the Office Actions mailed on December 22, 2004 and April 20, 2005 in this application, particularly the prior art rejections set forth therein. I have also reviewed the prior art references relied upon in those rejections, namely, U.S. Patent No. 5,532,592 to Coclough ("Coclough"), Nos. 4,493,092 and 4,507,793 to Adams (collectively "Adams"), and No. 6,188,314 to Wallace et al. ("Wallace").
4. Both Adams patents are directed to a twisted line pair transmission system specifically designed to have only a single slave device. As such, Fig. 1 of each patent illustrates only a single slave device. There is no suggestion in either patent that the disclosed system could be modified to work with more than one slave device (as specified in all presently pending claims of this application), and to the contrary it clearly appears that the disclosed systems would be incompatible with and could not plausibly be modified to work with more than one slave device.
5. Independent claim 11 as presently pending in this application includes the limitation that "the system has a background level of current draw noise and has a low voltage state and a high voltage state, and is configured and/or programmed to hold the voltage level of the system low such that the background level of current draw noise in

said system is held low when it is desired that a slave device talkback to said master device," and independent claim 16 includes a corresponding limitation. Coclough and Wallace each clearly fail to meet such limitation. Coclough comments that "various other low frequency noise reduction schemes can be implemented in addition to feedback current modulation and an AC bias current" (col. 17, lines 8-11), but does not teach or suggest holding the system's voltage level low during current modulation talkback such that the background level of current draw noise is held low.

6. Likewise, Wallace fails to teach or suggest a "system [that] has a background level of current draw noise and has a low voltage state and a high voltage state, and is configured and/or programmed to hold the voltage level of the system low such that the background level of current draw noise in said system is held low when it is desired that a slave device talkback to said master device." Conversely, as shown in Fig. 2 of Wallace, even though the current talkback initiates while the bus is at logic low voltage, it continues into the transition from logic low to logic high voltage. Further, the range of logic low to high voltage during which current modulation is performed in Wallace may be adequate – even during a single bit – to start charging the capacitor of the diode/capacitor pair. One of ordinary skill in the art at the time of filing this application would not have understood Wallace to clearly or inherently teach or suggest that the current draw noise is or should be held low during talkback.

7. Further, presently pending dependent claims 35-38 specify that communication to a slave device from the master device cannot occur simultaneously with communications from a slave device to the master device. The system disclosed in Wallace simultaneously performs voltage modulation communication from the master to the slaves and current modulation communication from the slaves to the master. Wallace does not suggest the temporal separation of these communications, nor could it readily be modified to do so.

8. I understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. § 1001), and may jeopardize the validity of this patent application or any patent issuing thereon.



Gimtong TeoweeDate: 5/18/2005